IN THE CLAIMS

1. (original) A microelectromechanical device comprising at least one thermoelectric layer on a substrate,

wherein a thermal expansion coefficient of said at least one thermoelectric layer differs greatly from a thermal expansion coefficient of the substrate, and

wherein said at least one thermoelectric layer is coupled to at least one stress reduction means for the targeted reduction of lateral mechanical stresses present in the layer.

2. (original) The microelectromechanical device as claimed in claim 1, wherein at least one stress reduction means is arranged between regions of at least one of a functional structure and a region with a thermoelectric layer.

3. (original) The microelectromechanical device as claimed in claim 1, wherein at least one region of the substrate has an antiadhesion layer for reducing or preventing the adhesion of material of the layer and thus for forming at least one stress reduction means.

4. (original) The microelectromechanical device as claimed in claim 3, wherein the antiadhesion layer comprises at least one of Ti-W alloy and SiO_2.

5. (original) The microelectromechanical device as claimed in claim 1, wherein a vertical offset between two laterally adjoining layers is arranged as said stress reduction means in at least one region on the substrate.

6. (currently amended) The microelectromechanical device as claimed in claim 5, wherein the vertical offset is formed by a prestructuring of the substrate_using at least one of an electrode metal and an adhesion layer.

7. (original) The microelectromechanical device as claimed in claim 1, wherein at least one trench is arranged as said stress reduction means in at least one region of the substrate.

8. (original) The microelectromechanical device as claimed in claim 7, wherein at least one trench has a depth of up to 100 μm.

9. (original) The microelectromechanical device as claimed in claim 1, wherein the difference between the thermal expansion coefficient of at least one layer and the thermal expansion coefficient of the substrate is at least $3 * 10^{-6} K^{-1}$.

10. (original) The microelectromechanical device as claimed in claim 9, wherein the difference between the thermal expansion coefficient of at least one layer and the thermal expansion coefficient of the substrate is at least $10^{-5} K^{-1}$.

11. (original) The microelectromechanical device as claimed in claim 1, wherein the layer thickness of said thermoelectric layer is in the range of 2 and 100 μm.

12. (original) The microelectromechanical device as claimed in claim 11, wherein the layer thickness is in the range of 20 and 100 μm.

13. (currently amended) The microelectromechanical device as claimed in claim 1, wherein the substrate_comprises at least one of mica, glass, BaF_2, silicon, silicon dioxide, silicon carbide and diamond.

14. (original) The microelectromechanical device as claimed in claim 1, wherein said thermoelectric layer forms at least one of a Peltier element and a thermogenerator element.

15. (currently amended) The microelectromechanical device as claimed in claim 1, wherein the thermoelectric layer comprises a thermoelectric material_including at least one of Bi_2Te_3, PbTe, SiGe and skutterrudite.